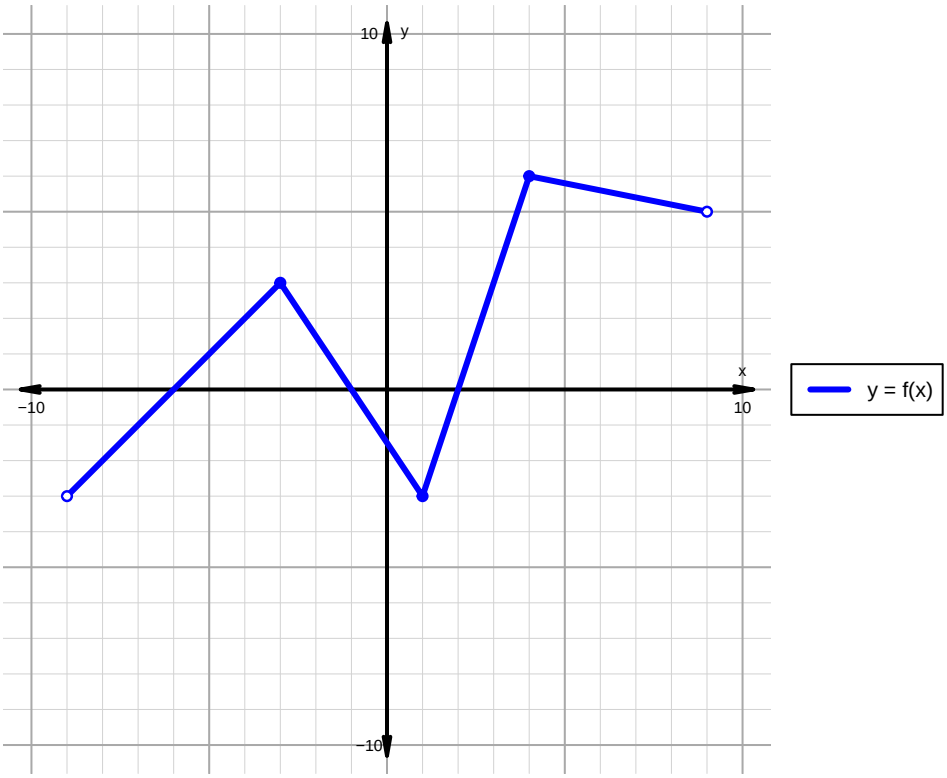
Name: Date:

Intervals, Transformations, and Slope Solution (version 73)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-6,-1)\cup(2,9)$
Negative	$(-9,-6)\cup(-1,2)$
Increasing	$(-9,-3)\cup(1,4)$
Decreasing	$(-3,1)\cup(4,9)$
Domain	$(-9,9)$
Range	$(-3,6)$

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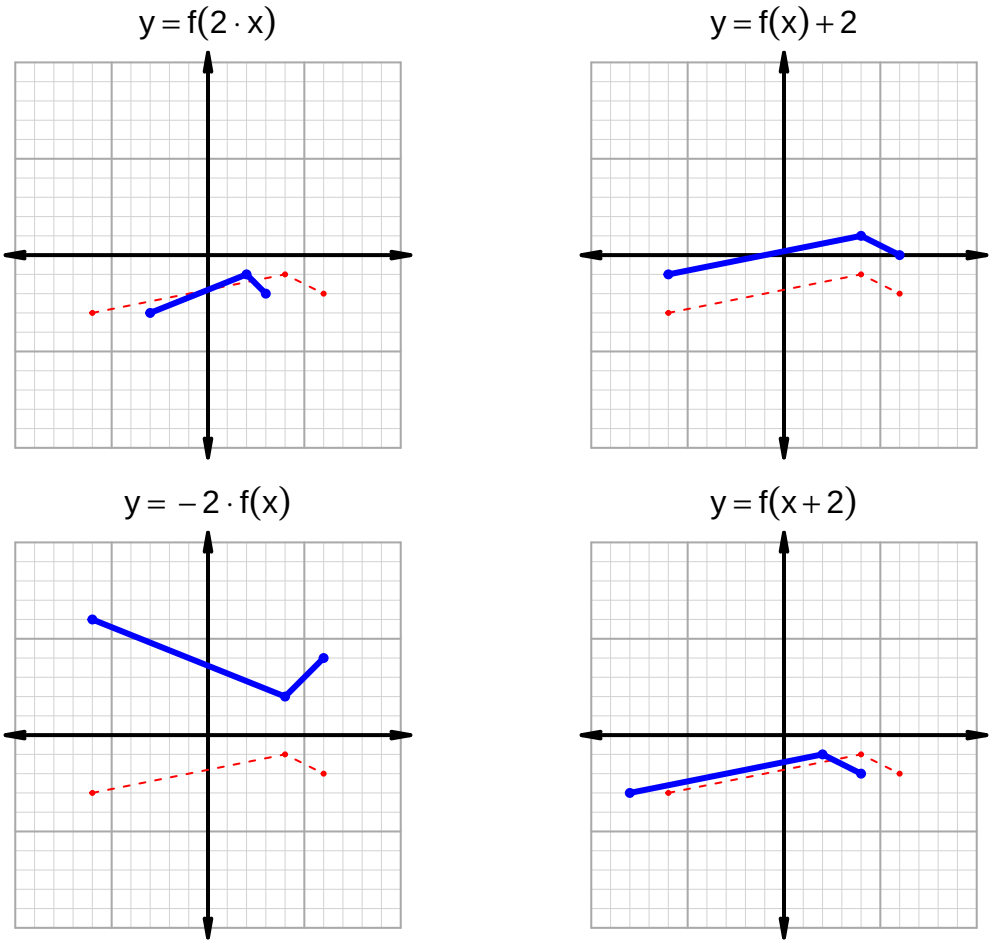
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 77$ and $x_2 = 81$. Express your answer as a reduced fraction.

x	$g(x)$
30	77
40	81
77	40
81	30

$\frac{g(81)-g(77)}{81-77} = \frac{30-40}{81-77} = \frac{-10}{4}$

The greatest common factor of -10 and 4 is 2. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{-5}{2}$$